

# HUMAN-COMPUTER INTERACTION

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A Journal of Theoretical, Empirical, and Methodological  
Issues of User Science and of System Design

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Volume 8  
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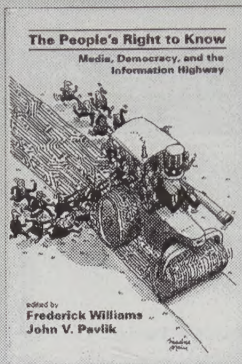
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# THE PEOPLE'S RIGHT TO KNOW Media, Democracy, and the Information Highway

EDITED BY  
**FREDERICK WILLIAMS AND JOHN V. PAVLIK,**  
*Columbia University*  
A VOLUME IN THE LEA TELECOMMUNICATIONS SERIES

It is no longer a question of whether a vastly expanded "information highway" will be built in America. Telephone and cable companies have already inaugurated their plans, and government will most likely incorporate such plans into the economic

development policy of the late 1990s. The key questions remaining are: Who will pay for it? and Whom exactly will it serve? *The People's Right to Know* suggests that serving the everyday citizen should be the main objective of any national initiatives in this area. It counsels that evolving electronic services are new communications media that should be deployed with a main focus on the public's needs, interests, and desires.

If advances in the nation's public telephone network will make information services as easy to use as ordinary voice calls, or newspapers promise vast new electronic services awaiting their readers, more attention must also be devoted to the information needs and wants of everyday citizens. In our increasingly multicultural and technology-driven society, there are vast inequities across America's socioeconomic classes regarding access to information critical to everyday life. If an information highway is to be effective, we need to ensure that all Americans have access to it; its design must start with the everyday citizen. This powerful new medium at our disposal must consider policy that includes attempts to close the information gap among our citizens: job, education, and health information services; legal information on such topics as immigration; and transactional services that offer assistance on such routine but time-consuming tasks as renewing a driver's license or registering to vote.

This important volume presents the pros and cons of a national service that will meet the information needs and wants of all people. In the preface, **Everette E. Dennis**, Executive Director of The Freedom Forum Media Studies Center, asks, "What will a true information highway — where most citizens enjoy a wide range of information services on demand — do to local communities, government, and business entities, other units of society and democracy itself?"

Media and telecommunications professionals, communication scholars, and policymakers, including two former chairmen of the Federal Communications Commission, provide insights and pointed commentary on the nature and shape of an information highway designed as a new public medium aimed at serving a wide range of public needs. Their work should improve our basis for deciding if there are means by which an enhanced public telecommunications network can benefit the everyday working American.

**Contents:** Foreword. **E.E. Dennis**, Preface. **Part I: Envisioning the Shape and Feel of a National Information Service.** **F. Williams**, On Prospects for Citizens' Information Services. **R. Fidler**, Newspapers in the Electronic Age. **M. Thalheimer**, Background Issues Related to Information Services. **J.V. Pavlik, Center Staff**, Roundtable: Sizing up Prospects for a National Information Service. **Part II: Citizen Information Services and the Public Interest.** **W. Dutton**, Lessons from Public and Not-for-Profit Services. **J.V. Pavlik**, Citizen Access, Involvement and Freedom of Expression in an Electronic Environment. **Part III: Policymaking Regarding Citizen Information Services.** **A. Sikes**, Charting the Future of Communication Services. **H.S. Dordick, D.E. Lehman**, Information Highways: Trickle Down Infrastructure? **E.M. Noam, C.D. Ferris, E.C. Parker**, Policy Implications for Citizen Information Services. **F. Williams, J.V. Pavlik**, Epilog.

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# COMPUTER-ASSISTED CAREER DECISION MAKING

## THE GUIDE IN THE MACHINE

MARTIN R. KATZ

*EDUCATIONAL TESTING SERVICE*

Discussing career decision making (CDM), career guidance, a computerized system of career guidance, and the interplay among them, this book describes the way people sort themselves, or are sorted, into educational and occupational options. The options represent the content of this book, and the sorting represents the process. The sequence of decisions may extend over a lifetime, but several crucial choice-points tend to occur at predictable stages in a career. Career guidance is a professional intervention in CDM; "professional" implies that practitioners conform to a standard of ethics, knowledge, and competence beyond what may be offered by other intervenors. Guidance is partly an art, but it is also partly a science -- at least an application of science, based on a synthesis of logic and evidence derived from research.

The computerized *System of Interactive Guidance and Information* (SIGI) is a designated guidance "treatment," clearly defined and specified. It was developed according to an explicit model, derived from a particular rationale for guidance, using modern technology to amplify the practice of career guidance. The current version -- called SIGI PLUS <sup>TM</sup> -- is being used at more than a thousand colleges and universities, as well as secondary schools, libraries, corporations, community-based organizations, and counseling agencies.

These three interdependent topics are treated in a progression: from a theory of CDM to a rationale and a model for guidance to the design and development of a system. This book weaves together theory (principles, propositions, rationales, and models), research and development. The product of that development, SIGI, helps to define theory, to exemplify it, and to test it.

**Contents:** Introduction. **Part I: Career Decision Making.** Components of Career Decision Making. Decisions About Work. Decisions About Occupations and Jobs. Decisions About Career Education and Training. **Part II: The Needs for Guidance.** General Recognition of Students' Needs for Guidance. Specification of Individuals' Needs for Career Guidance. Interaction Between Societal and Individual Needs. Specification of Colleges' Needs. Specification of Corporate Needs. Specification of Developers' Needs. Recapitulation of Needs and Purposes. **Part III: Rationales and Models of Career Guidance.** The Model for a Guidance System. Major Approaches to Guidance. **Part IV: Focus on Functions of a Guidance System.** The Domains of Self-Understanding. The Dimensions of Values. The Structure of Interests. Prediction in SIGI. Skills in SIGI PLUS. Occupational Information. A Strategy for Deciding. Decisions into Actions. Style and Design. **Part V: The Evaluation of a Guidance System.** Big Questions and Little Questions. Aspects of Validity. Efficacy: The Criterion Problem. The Evaluation of SIGI. Comparisons of Males and Females in CDM. The Evaluation of SIGI PLUS. Independent Evaluations. **Part VI: Conclusion.** Prospects. A Final Note.  
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# PARTICIPATORY DESIGN

## PRINCIPLES AND PRACTICES

edited by  
**DOUGLAS SCHULER AND AKI NAMIOKA**  
*BOEING COMPUTER SERVICES*

The voices in this collection are primarily those of researchers and developers concerned with bringing knowledge of technological possibilities to bear on informed and effective system design. Their efforts are distinguished from many previous writings on system development by their central and abiding reliance on direct and continuous interaction with those who are the ultimate arbiters of system adequacy; namely, those who will use the technology in their everyday lives and work. A key issue throughout is the question of who does what to whom: whose interests are at stake, who initiates action and for what reason, who defines the problem and who decides that there is one.

The papers in this collection follow in the footsteps of a small but growing international community of scholars and practitioners of participatory systems design. Many of the original European perspectives are represented here as well as some new and distinctively American approaches. The collection is characterized by a rich and diverse set of perspectives and experiences that, despite their differences, share a distinctive spirit and direction -- a more humane, creative, and effective relationship between those involved in technology's design and use, and between technology and the human activities that motivate the technology.

**Contents:** L. Suchman, Foreword. **Part I: Context.** E. Bravo, The Hazards of Leaving Out the Users. F. Emspak, Workers, Unions, and New Technology. J. Greenbaum, A Design of One's Own: Towards Participatory Design in the United States. **Part II: Principles and Issues.** P. Ehn, Scandinavian Design: On Participation and Skill. K. Grønbaek, J. Grudin, S. Bødker, L. Bannon, Achieving Cooperative System Design: Shifting from a Product to a Process Focus. J. Grudin, Obstacles to Participatory Design in Large Product Development Organizations. **Part III: Approaches to Participatory Design.** J. Blomberg, J. Giacomi, A. Mosher, P. Swenton-Wall, Ethnographic Field Methods and Their Relation to Design. S. Bødker, K. Grønbaek, M. Kyng, Cooperative Design: Techniques and Experiences from the Scandinavian Scene. K. Holtzblatt, S. Jones, Contextual Inquiry: A Participatory Technique for System Design. M. Muller, PICTIVE -- Democratizing the Dynamics of the Design Session. C. Allen, Reciprocal Evolution: as a Strategy for Integrating Basic Research, Design, and Studies of Work Practices. **Part IV: Case Studies.** E. Mumford, The Participation of Users in Systems Design: An Account of the Origin, Evolution and Use of the ETHICS Method. K. Thoresen, Principles in Practice -- Two Cases of Situated Participatory Design. J. Greenbaum, K.H. Madsen, Small Changes: Starting a Participatory Design Process by Giving Participants a Voice.

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# COMMUNICATION AT A DISTANCE

## The Influence of Print on Sociocultural Organization and Change

David S. Kaufer and Kathleen M. Carley

*Carnegie Mellon University*

*A VOLUME IN LEA's COMMUNICATION SERIES*

This book bridges an important gap between two major approaches to mass communication — historical and social scientific. To do so, it employs a theory of communication that unifies social, cultural and technological concerns into a systematic and formal framework that is then used to examine the impact of print within the larger sociocultural context and across multiple historical contexts. The authors integrate historical studies and more abstract formal representations, achieving a set of logically coherent and well-delimited hypotheses that invite further exploration, both historically and experimentally.

A second gap that the book addresses is in the area of formal models of communication and diffusion. Such models typically assume a homogeneous population and a communication whose message is abstracted from the complexities of language processing. In contrast, the model presented in this book treats the population as heterogeneous and communications as potentially variable in their content as they move across speakers or readers.

Written to address and overcome many of the disciplinary divisions that have prevented the study of print from being approached from the perspective of a unified theory, this book employs a focused interdisciplinary position that encompasses several domains. It shows the underlying compatibility between cognitive and social theory; between the study of language and cognition and the study of technology; between the postmodern interest in the instability of meaning and the social science interest in the diffusion of information; between the effects of technology and issues of cultural homogeneity and heterogeneity. Overall, this book reveals how small, relatively non-interactive, disciplinary-specific conversations about print are usefully conceived of as part of a larger interdisciplinary inquiry.

**Contents:** Preface and Introduction. Part I: *Theory*. Written Content as Emergent Phenomena. Contexts Sustaining Print Transactions. Communicative Transactions and Their Ecology: Definitions and Axioms. The Role of Language in the Communicative Transaction. The Dynamics of the Communicative Transaction. Part II: *Applications*. Print. Professions. Academia. Migration and Authority. Afterword.

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